

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. through 167. (cancelled)

168. (previously presented): A communication control method, comprising:
providing a vacant period, in which no communication data is present, in a data transmission from a base station to a mobile station;
inserting a first pilot signal, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period; and
inserting a second pilot, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

169. (currently amended): A communication control method, comprising:
providing a vacant period, in which no communication data is present, in a data
transmission from a base station to a mobile station;
inserting a first pilot signal, such that a beginning of the first pilot signal is contiguous
with an end of a data transmission prior to the vacant period;

inserting a second pilot, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period; ~~The communication control method according to claim 168, further comprising:~~

extracting at least one of the first and second pilot signals from the data transmission;
measuring a reception quality of the data transmission on the basis of the at least one extracted pilot signal;

generating a transmission power control signal, which controls transmission power of a signal from the base station to the mobile station, on the basis of the measured reception quality;
and

transmitting the transmission power control signal from the mobile station to the base station.

170. (currently amended): A communication control method, comprising:

~~The communication control method according to claim 168, further comprising:~~

~~before providing the vacant period,~~

transmitting a notification signal from ~~the~~ a mobile station to ~~the~~ a base station based on a detection of a degradation in link quality; ~~and~~

switching the base station from a standard transmission mode to a transmission mode having a vacant period based on the transmitted notification signal; and

after switching from the standard transmission mode to the transmission mode having a vacant period:

providing a vacant period, in which no communication data is present, in a data transmission from the base station to the mobile station;

inserting a first pilot signal, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period; and

inserting a second pilot, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

171. (previously presented): A communication control method, comprising:
providing a vacant period, in which no communication data is present, in a data transmission from a base station to a mobile station and
inserting a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

172. (currently amended): A communication control method, comprising:
providing a vacant period, in which no communication data is present, in a data transmission from a base station to a mobile station;
inserting a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period; ~~The communication control method according to claim 171, further comprising:~~
extracting the pilot signal from the data transmission;

measuring a reception quality of the data transmission on the basis of the extracted pilot signal;

generating a transmission power control signal, which controls transmission power of a signal from the base station to the mobile station, on the basis of the measured reception quality; and

transmitting the transmission power control signal from the mobile station to the base station.

173. (currently amended): A communication control method, comprising:
~~communication control method according to claim 171, further comprising:~~

~~before providing the vacant period,~~

transmitting a notification signal from ~~the~~ a mobile station to ~~the~~ a base station based on a detection of a degradation in link quality; and

switching the base station from a standard transmission mode to a transmission mode having a vacant period based on the transmitted notification signal; and

after switching from the standard transmission mode to the transmission mode having a vacant period:

providing a vacant period, in which no communication data is present, in a data transmission from the base station to the mobile station and

inserting a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

174. (currently amended): A communication control system, comprising:
a base station, comprising:

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

a second circuit which provides a first pilot signal, such that a beginning ~~on~~of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and which inserts a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

175. (currently amended): A communication control system, comprising:
a base station, comprising:

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

a second circuit which provides a first pilot signal, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and which inserts a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period; and ~~The communication control system according to claim 174, further comprising:~~
the mobile station, comprising:

a transmission and reception circuit which receives the data transmission from the base station,

a pilot signal extracting portion which extracts at least one of the first and second pilot signals from the received data transmission,

an SIR measuring portion which measures a reception quality of the received data transmission, on the basis of the at least one extracted pilot signal, and

a transmission power control signal generating portion which generates a transmission power control signal, to be transmitted from the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal from the base station to the mobile station.

176. (currently amended): A communication control system, comprising:
a base station, comprising:

~~The communication control system according to claim 174, wherein:~~

~~the base station further comprises a transmission and reception circuit which receives a notification from the a mobile station to enter a transmission mode including a vacant period; and~~

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station, the vacant period is provided upon the receipt of the notification from the mobile station; and

a second circuit which provides a first pilot signal, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and which inserts a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

177. (previously presented): A communication control system, comprising:

a base station, comprising:

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

a control signal inserting portion which inserts a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

178. (currently amended): A communication control system, comprising:

a base station, comprising:

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

a control signal inserting portion which inserts a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period; and ~~The communication control system according to claim 177, further comprising:~~

a mobile station, comprising:

a transmission and reception circuit which receives the data transmission from the base station,

a pilot signal extracting portion which extracts the pilot signal from the received data transmission,

an SIR measuring portion which measures a reception quality of the received data transmission on the basis of the pilot signal, and

a transmission power control signal generating portion which generates a transmission power control signal, to be transmitted from the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal from the base station to the mobile station.

179. (currently amended): A communication control system, comprising:

a base station, comprising: ~~The communication control system according to claim 177,~~

~~wherein:~~

~~the base station further comprises~~ a transmission and reception circuit which receives a notification from a mobile station to enter a transmission mode including a vacant period ~~and;~~

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station, the vacant period in provided upon the receipt of the notification from the mobile station; and
a control signal inserting portion which inserts a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

180. (previously presented): A mobile station in a mobile communication system, comprising:

a transmission and reception circuit which receives a data transmission from a base station;

wherein the data transmission includes:

a vacant period in which no data communication is present,

a first pilot signal inserted such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and

a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period,

a pilot signal extracting portion which extracts at least one of the first and second pilot signals from the received data transmission;

an SIR measuring portion which measures a reception quality of the received data transmission on the basis of the at least one extracted pilot signal; and

a transmission power control signal generating portion which generates a transmission power control signal to be transmitted to the base station, on the basis of the measured reception quality.

181. (previously presented): A mobile station in a mobile communication system, comprising:

a transmission and reception circuit which receives a data transmission from a base station;

wherein the data transmission includes:

a vacant period in which no data communication is present, and

a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period,

a pilot signal extracting portion which extracts the pilot signal from the received data transmission;

an SIR measuring portion which measures a reception quality of the received data transmission on the basis of the extracted pilot signal; and

a transmission power control signal generating portion which generates a transmission power control signal to be transmitted to the base station, on the basis of the measured reception quality.

182. (previously presented): A control method of a mobile station in a mobile communication system, comprising:

- receiving a data transmission from a base station, wherein the data transmission includes:
 - a vacant period in which no data communication is present,
 - a first pilot signal inserted, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and
 - a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period;
- extracting at least one of the first and second pilot signals from the received data transmission;
- measuring a reception quality of the received data transmission on the basis of the at least one extracted pilot signal;
- generating a transmission power control signal on the basis of the measured reception quality; and
- transmitting the generated transmission power control signal to the base station.

183. (currently amended): A control method of a mobile station in a mobile communication system, comprising: ~~The control method according to claim 182, further comprising:~~

- ~~prior to receiving the data transmission from the base station, detecting a degradation of link quality and;~~

upon the detection of a degradation in link quality, transmitting a notification signal to the ~~a~~ base station to switch from a standard transmission mode to a transmission mode having a vacant period; and

after transmitting the notification signal to the base station:

receiving a data transmission from the base station, wherein the data transmission includes:

a vacant period in which no data communication is present,

a first pilot signal inserted, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and

a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period;

extracting at least one of the first and second pilot signals from the received data transmission;

measuring a reception quality of the received data transmission on the basis of the at least one extracted pilot signal;

generating a transmission power control signal on the basis of the measured reception quality; and

transmitting the generated transmission power control signal to the base station.

184. (previously presented): A communication control method of a mobile station in a mobile communication system, comprising:

receiving a data transmission from a base station, wherein the data transmission includes:

a vacant period in which no data communication is present and

a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period;

extracting the pilot signal from the received data transmission;

measuring a reception quality of the received data transmission on the basis of the extracted pilot signal;

generating a transmission power control signal on the basis of the measured reception quality; and

transmitting the generated transmission power control signal to the base station.

185. (currently amended): A communication control method of a mobile station in a mobile communication system, comprising:~~The control method according to claim 184, further comprising:~~

~~prior to receiving the data transmission from the base station, detecting a degradation of link quality and;~~

upon the detection of a degradation in link quality, transmitting a notification signal to ~~the a~~ base station to switch from a standard transmission mode to a transmission mode having a vacant period; and

after transmitting the notification signal,

receiving a data transmission from the base station, wherein the data transmission
includes:

a vacant period in which no data communication is present and
a pilot signal, such that an end of the pilot signal is contiguous with a
beginning of a data transmission after the vacant period;
extracting the pilot signal from the received data transmission;
measuring a reception quality of the received data transmission on the basis of the
extracted pilot signal;
generating a transmission power control signal on the basis of the measured
reception quality; and
transmitting the generated transmission power control signal to the base station.

186. (previously presented): A communication control system, comprising:

a base station, comprising:

means for providing a vacant period, in which no communication data is present,
in a data transmission from the base station to a mobile station and

means for providing a first pilot signal, such that a beginning of the first pilot
signal is contiguous with an end of a data transmission prior to the vacant period, and for
inserting a second pilot signal, such that an end of the second pilot signal is contiguous
with a beginning of a data transmission after the vacant period.

187. (currently amended): A communication control system, comprising:

a base station, comprising:

means for providing a vacant period, in which no communication data is present,

in a data transmission from the base station to a mobile station and

means for providing a first pilot signal, such that a beginning of the first pilot

signal is contiguous with an end of a data transmission prior to the vacant period, and for

inserting a second pilot signal, such that an end of the second pilot signal is contiguous

with a beginning of a data transmission after the vacant period~~The communication~~

~~control system according to claim 186, further comprising;~~ and

a mobile station, comprising:

means for receiving the data transmission from the base station;

means for extracting at least one of the first and second pilot signals from the
received data transmission;

means for measuring a reception quality of the received data transmission, on the
basis of the at least one extracted pilot signal; and

means for generating and transmitting a transmission power control signal from
the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal
from the base station to the mobile station.

188. (currently amended): A communication control system, comprising:
a base station, comprising:~~The communication control system according to claim 186,~~
~~wherein the base station further comprises:~~

means for receiving a notification from a mobile station to enter a transmission mode including a vacant period;

means for providing a vacant period, in which no communication data is present,
in a data transmission from the base station to a mobile station,~~wherein the vacant period~~
~~is provided by the base station~~ upon the receipt of the notification from the mobile station; and

means for providing a first pilot signal, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and for inserting a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

189. (previously presented): A communication control system, comprising:
a base station, comprising:

means for providing a vacant period, in which no communication data is present,
in a data transmission from the base station to a mobile station and

means for inserting a pilot signal, such that an end of the pilot signal is contiguous
with a beginning of a data transmission after the vacant period.

190. (currently amended): A communication control system, comprising:
a base station, comprising:
means for providing a vacant period, in which no communication data is present,
in a data transmission from the base station to a mobile station and
means for inserting a pilot signal, such that an end of the pilot signal is contiguous with a
beginning of a data transmission after the vacant period; and~~The communication control system~~
~~according to claim 189, further comprising:~~
a mobile station, comprising:
means for receiving the data transmission from the base station;
means for extracting the pilot signal from the received data transmission;
means for measuring a reception quality of the received data transmission on the
basis of the extracted pilot signal; and
means for generating and transmitting a transmission power control signal from
the mobile station to the base station, on the basis of the measured reception quality;
wherein the transmission power control signal controls transmission power of a signal
from the base station to the mobile station.

191. (currently amended): A communication control system, comprising:
a base station, comprising:~~The communication control system according to claim 189,~~
~~wherein the base station further comprises:~~

means for receiving a notification from ~~the~~ a mobile station to enter a transmission mode including the vacant period,

means for providing a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station, ~~wherein the vacant period is provided by the base station~~ upon the receipt of the notification from the mobile station; and

means for inserting a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

192. (previously presented): A mobile station in a mobile communication system, comprising:

means for receiving a data transmission from a base station,
wherein the data transmission includes

a vacant period in which no data communication is present,

a first pilot signal inserted, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and

a second pilot signal inserted, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period;

means for extracting at least one of the first and second pilot signals from the received data transmission;

means for measuring a reception quality of the received data transmission on the basis of the at least one extracted pilot signal; and

means for generating and transmitting a transmission power control signal to the base station, on the basis of the measured reception quality.

193. (previously presented): A mobile station in a mobile communication system, comprising:

means for receiving a data transmission from a base station,

wherein the data transmission includes

a vacant period in which no data communication is present and

a pilot signal inserted, such that an end of the pilot signal is contiguous

with a beginning of a data transmission after the vacant period;

means for extracting the pilot signal from the received data transmission;

means for measuring a reception quality of the received data transmission on the basis of the extracted pilot signal; and

means for generating and transmitting a transmission power control signal to the base station, on the basis of the measured reception quality.